Climate Program Office

Sectoral Applications Research Program

Can a farmer in the drought-affected Southeast and a water resource manager in the rainy Northwest both get the climate information they need?

The Sectoral Applications Research Program (SARP) supports interdisciplinary research on the effects of, and potential responses to, climate variability and change within specific sectors of society. Current SARP projects serve the coastal and water sectors, providing climate information for individuals across a range of situations. Within the water sector, projects focus on drought and urban water resources.

SARP Objectives

- Identify potential impacts and societal vulnerabilities in specific sectors of society and enhance their capacity to cope with and adapt to climate variability and change.

- Enhance the use of climate information and decision support resources in various sectors at local to international scales.

- Provide sector-specific insight and feedback on stakeholder needs and capabilities to contribute to relevant research and decision support efforts.

- Develop intra- and inter-agency linkages to infuse climate information into sector-specific decision making processes.

NOAA / CCMA Biogeography Project

In Florida, SARP supports a project that is working to enhance the resliency of coral ecosystems of the Florida Keys and South Florida. Here, blue tangs swim in a forest of elkhorn coral.

Approaches

Projects funded by SARP strive to identify sector-specific vulnerabilities to climate impacts, and work to improve capacity to cope with and adapt to climate variability and change within that sector. SARP projects result in the development of tools, models, methodologies, and innovative outreach activities that enhance sectors' abilities to use climate information and decision support resources.

In the coastal sector, SARP provides support for projects that link climate science-based resources with people facing practical challenges along coastlines. Challenges include sea level rise, shoreline erosion, population growth and development, hazard mitigation and the health and

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Approaches (continued)

well-being of estuarine, coastal wetland, and coral reef systems. Among other results, SARP's coastal projects develop vulnerability assessments, quantify the benefits of enhancing preparedness, and increase public awareness of actions that can be undertaken to mitigate impacts in the face of climate change and variability.

SARP projects also explore the influence of climate variability and change on water resources in urban environments. Components of this task include:

- Determining what variables influence urban water availability,

- Assessing the costs of impacts and response strategies,

- Promoting development of successful knowledge-to-action networks,

- Developing decision support tools for water planners, and

- Increasing public awareness of methods for adapting to the impacts of reduced water availability.

The program also supports research in the areas of risk perception, analysis, and management of drought planning, in support of the National Integrated Drought Information System. These activities include assessments of potential economic impacts of drought, analyses of the benefits of preparedness for drought, and efforts to share strategies for how local, regional, and state jurisdictions can develop plans to respond to water demand in the face of drought.

SARP's Flexibility

With its focus on serving specific sectors within society, SARP could also facilitate new projects that address a range of climate-related issues. Health-related concerns such as an outbreak of vector-borne disease or an increase in heat-related urban deaths could be addressed by projects that serve the public health sector. Energy-related issues such as the use of long-lead climate forecasts in addressing urban energy needs, or agricultural and food supply issues in which climate projections could be used to alert areas expected to be affected by long-term climate events such as El Niño could also be addressed through SARP.

A recent SARP-sponsored workshop convened a range of experts on water policy and urban management with climate scientists from NOAA. The group identified research needs and decision support services that urban water managers could use to enhance their cities' adaptability to climate change.

Sacme, Wikimedia Commons

SARP Highlights

The Climate Change LEADS Project

The World Wildlife Federation's Climate Change LEADS Project (Linking Environmental Analysis to Decision Support) is funded by SARP. The LEADS project is working to enhance resilience in the valuable yet vulnerable coral ecosystem of the Florida Keys and South Florida. The project is uniting concerned people, resource managers, and researchers in an informed dialogue to explore ways of adapting coral reef conservation efforts to account for climate change. A geographic information system will eventually allow anyone to explore patterns in environmental conditions that relate to reef resilience. Coral assemblages that are more resilient are better able to resist, tolerate, or recover from climate change stresses, including coral bleaching caused by high water temperatures.

Surveys Reveal Coastal Sector Concerns about Climate Change Impacts

Partnering with Sea Grant programs in Oregon and Maine, SARP supported surveys of coastal landowners and decision makers to gauge their concern about the expected effects of climate change along coasts in the two states. Results of the surveys show that coastal residents are very aware of the direct effects of climate change: a large majority of respondents believe that both government and individuals should begin taking action now to adapt to expected impacts. The results provide insight into attitudes among the public in the coastal sector and point to the types of information and resources that coastal communities need to inform their decisions on climate change adaptation efforts.